Unit Title: *Communication Technologies in Agriculture* **Grade Level(s)**:
Subject/Topic Areas: *Communication Technology*
Time Frame:
Key Words:
Technology:
Unit Designer(s):
School District: **School**:

Brief Summary of Unit

Desired Results

Enduring Understandings: *Students will understand **that**...*

What will students understand (about what big ideas) as a result of the unit? "Students will understand that…"

Essential Questions

What arguable, recurring, and thought-provoking questions will guide inquiry and point toward the big ideas of the unit?

Link to Content Standards

Use "Technical Guide" format where available. Use fields as appropriate for content area.
Content Area: i.e. Language Arts **Source**: i.e. SD Content Standards
Goal: List only one

Indicator: List only one

Benchmark(s): May list all that apply for the given Goal and Indicator.

Standards (knowledge and skills): Students will know and be able to do...
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Designate approved standards with an asterisk.

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Evidence of Understanding

Range of Evidence

Performance Task Vignette(s):
Through what authentic performance task(s) will students demonstrate understanding? Provide a task overview (including GRASPS: Goal, role, audience, situation, product or performance, and standards) for each student performance task that will be used to assess student understanding.

Note the type of scoring tools that will be used to evaluate the products/performances – analytic rubric, holistic rubric, criterion performance list or checklist.

Other Evidence: Quizzes, Tests, Academic Prompts and Work Samples
What other assessment evidence will be collected during this unit?

Summarize the tools and tasks that will be used to monitor and guide student achievement.

Unprompted Evidence

Summarize the observations and dialogues that may be used throughout the unit to monitor student learning.

Self-Assessment / Peer-Assessment

Summarize the assessment methods that will be used to guide student self-assessment and peer-assessment.

Learning Experiences and Instruction

Learning Activities:

Students will know WHERE the unit is headed and WHY:
How will you help students know *where* they are headed and *why*?

Students will be HOOKED through engaging and provocative entry points:
How will you *hook* students through engaging and thought-provoking experiences?

Students will EXPLORE and be ENABLED/EQUIPPED for final performances:
How will you *equip* students to *explore* the issues and *experience* the ideas?
What *events*, real or simulated, can students experience to make the ideas and issues real?
What learning activities will help students to *explore* the big ideas?
What instruction is needed to *equip* students for the final performance?

Students will REFLECT and RETHINK:
How will you cause students to *reflect* and *rethink* to dig deeper into the core ideas?
How will you guide students in *rehearsing, revising,* and *refining* their work?

Students will EXHIBIT and EVALUATE:
How will students *exhibit* their understanding about their final performances and products?
How will you guide them in self-*evaluation* to identify strengths and weaknesses in their work and set in future goals?

Unit activities will be TAILORED to meet student needs, interests and learning styles:
How will work be *tailored* to meet individual student needs, interests and learning styles?

Instruction and learning activities will be OGRANIZED to be engaging and effective:
How will the instruction and learning activities be organized for maximal engagement and effectiveness?

Learning Sequence:

Summarize or provide a list of the sequence of teaching and learning activities.

I. Agriculture in North Dakota
   - A. Raw Materials
   - B. Resources
   - C. the Process

II. Operation Costs—Effectively Running the Operation *(very specific)*
   - A. Seek assistance from Ag. Educator
   - B. Extension Agent Guest Speaker
   - C. DTN's

III. Honing in on one material (wheat) *(very specific)*

IV. Production

V. Technologies in Agriculture that makes this possible *(*Remember Sender, Channel, Receiver, Feedback*)
   - A. Ariel Photography
   - B. GPS
   - C. Laser Technologies with Receivers
   - D. Chemicals
   - E. Analysis—Organic Qualities
   - F. Satellite imagery
   - G. GIS Mapping
   - H. Telecommunications
   - I. Cell phones
   - J. CB's

VI. Marketing
   - A. Labeling
   - B. Advertising
   - C. Marketability of various product aspects
   - D. Grading Systems

VII. Future of Agriculture
   - A. Bio-tech commercialization
   - B. Family Farm Structure is changing

<u>Activity Ideas:</u>

1. Satellite Imagery
2. GIS Mapping
3. Research and create a portfolio—steer to plate
4. Cooperative Horticulture activity

Standards Addressed:

Summarize or provide a list of the standards being addressed through teaching and learning activities.

Standard 4: Students will develop an understanding of the cultural, social, economic, and political effects of technology.

- Benchmark H: Changes caused by the use of technology can range from gradual to rapid and from subtle to obvious.
- Benchmark I: Making decisions about the use of technology involves weighing the trade-offs between the positive and negative effects.

Standard 15: Students will develop an understanding of and be able to select and use agricultural and related biotechnologies.

- Benchmark F: Technological advances in agriculture directly affect the time and number of people required to produce food for a large population.
- Benchmark K: Agriculture includes a combination of businesses that use a wide array of products and systems to produce, process, and distribute food, fiber, fuel, chemical, and other useful products.

Standard 17: Students will develop an understanding of and be able to select and use information and communication technologies.

- Benchmark M: Information and communication systems allow information to be transferred from human to human, human to machine, machine to human, and machine to machine.
- Benchmark P: There are many ways to communicate information, such as graphic and electronic means

Resources and Credits

Web Based Resources

Include internet resource links that are key to the implementation of the unit. Provide your own webpage link if further Unit of Study information and resources may be found there.

http://www.iteawww.org/
http://icontechlit.enc.org/
http://webster.commnet.edu/mla/index.shtml
http://www.apastyle.org/elecref.html

Publications and Print Resources

Provide bibliography information for print resources that will be used in the implementation of this unit.

Credits

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Unit Designer Comments

Provide any additional notes concerning the unit, as well as any suggestions you have for the would-be users of the unit.

Unit Title: *Construction—Capturing Societal Climate* **Grade Level(s)**:
Subject/Topic Areas: *Communication Technology*
Time Frame:
Key Words:
Technology:
Unit Designer(s):
School District: **School**:

Brief Summary of Unit

Desired Results

Enduring Understandings: *Students will understand **that**...*

What will students understand (about what big ideas) as a result of the unit? "Students will understand that…"

Essential Questions

What arguable, recurring, and thought-provoking questions will guide inquiry and point toward the big ideas of the unit?

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Range of Evidence

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Instruction and learning activities will be OGRANIZED to be engaging and effective:
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Learning Sequence:

Summarize or provide a list of the sequence of teaching and learning activities.

I. Design Process
   A. CAD to finished product
II. Materials
   A. Steel
   B. Wood
      1. Particle Board
      2. Plywood
      3. Composite Materials
         a) Defining what makes these
         b) Defining how these materials are pre-fabricated
   C. Block/Brick
III. Structures
   A. Types
   B. Parts
      1. Foundations
      2. Walls
      3. Rafters
      4. Flooring
IV. Building Processes
   A. Steps
   B. Prefabrication
V. Remodeling

Activity Ideas:

1. Research the different materials used in construction or the evolution of those materials.
2. Create a power point detailing the different materials used in construction or the evolution of those materials.
3. Create a photo portfolio detailing the process involved in building.
4. Create a photo portfolio for a contractor or carpenter.
5. Create a display showing the different structure types used in local construction.
6. Tours
   a. Cabinet shops
   b. Prefab
   c. Plastics
7. Guest Speakers
8. Video documentary of a construction process

Standards Addressed:

Summarize or provide a list of the standards being addressed through teaching and learning activities.

Standard 3: Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.

- Benchmark H: Technological innovation often results when ideas, knowledge, or skills are shared within a technology, among technologies, or across other fields.

Standard 5: Students will develop an understanding of the effects of technology on the environment.

- Benchmark H: When new technologies are developed to reduce the use of resources, considerations of trade-offs are important.

Standard 8: Students will develop an understanding of the attributes of design.

- Benchmark H: The design process includes defining a problem; brainstorming; researching and generating ideas; identifying criteria and specifying constraints; exploring possibilities; selecting an approach; developing a design proposal; making a model or prototype; testing and evaluating the design using specifications; refining the design; creating or making it; and communicating processes and results.
- Benchmark K: Requirements of a design, such as criteria, constraints, and efficiency, sometimes compete with each other.

Standard 20: Students will develop an understanding of and be able to select and use construction technologies.

- Benchmark J: Infrastructure is the underlying base or basic framework of a system.
- Benchmark N: Structures can include prefabricated materials.

Resources and Credits

Web Based Resources

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http://icontechlit.enc.org/
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Unit Designer Comments

Provide any additional notes concerning the unit, as well as any suggestions you have for the would-be users of the unit.

Unit Title: *Evolution of the Camera* **Grade Level(s)**:
Subject/Topic Areas: *Communication Technology*
Time Frame:
Key Words:
Technology:
Unit Designer(s):
School District: **School**:

Brief Summary of Unit

Desired Results

Enduring Understandings: *Students will understand **that**...*

What will students understand (about what big ideas) as a result of the unit? "Students will understand that…"

Essential Questions

What arguable, recurring, and thought-provoking questions will guide inquiry and point toward the big ideas of the unit?

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Evidence of Understanding

Range of Evidence

Performance Task Vignette(s):
Through what authentic performance task(s) will students demonstrate understanding? Provide a task overview (including GRASPS: Goal, role, audience, situation, product or performance, and standards) for each student performance task that will be used to assess student understanding.

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Summarize the observations and dialogues that may be used throughout the unit to monitor student learning.

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Learning Experiences and Instruction

Learning Activities:

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How will the instruction and learning activities be organized for maximal engagement and effectiveness?

Learning Sequence:

Summarize or provide a list of the sequence of teaching and learning activities.

I. Digital operations
    1. Settings
    B. Memory options
    C. Output choices

II. History of digital technology
    A. Inventors
    B. Timeline
        1. Scientific Knowledge (now)
        2. Technological Know-How (then)
    C. What's new
        1. Interchangeability of parts increases the effectiveness of manufacturing processes of the camera
        2. Fads of the time period dictate part and function changes

III. Effects on printing
    A. Dot matrix
    B. Inkjet
    C. Laser

IV. Manipulation of imagery
    A. Darkroom editing
    B. Digital manipulation

V. Legal implications
    A. Ethics considerations
    B. Legal ramifications
    C. Patents/Copyrights (Neustal Law Office in Fargo—possible contact resource)

VI. Occupational opportunities
    A. Advertising
    B. Medical
    C. Photography
    D. Graphic Arts

Activity Ideas:

1. Build a pin-hole camera (Bob Naslund has this activity)
2. Graphic manipulation/animation exercise
3. "Dream Camera" prototyping project

Standards Addressed:

Summarize or provide a list of the standards being addressed through teaching and learning activities.

Standard 3: Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.

- Benchmark H: Technological innovation often results when ideas, knowledge, or skills are shared within a technology, among technologies, or across other fields.
- Benchmark I: Technological ideas are sometimes protected through the process of patenting.

Standard 4: Students will develop an understanding of the cultural, social, economic, and political effects of technology.

- Benchmark H: Changes caused by the use of technology can range from gradual to rapid and from subtle to obvious.
- Benchmark I: Making decisions about the use of technology involves weighing the trade-offs between the positive and negative effects.
- Benchmark J: Ethical considerations are important in the development, selection, and use of technologies.

Standard 7: Students will develop an understanding of the influence of technology on history.

- Benchmark G: Most technological development has been evolutionary—the result of a series of refinements to a basic invention.
- Benchmark J: Early in the history of technology, the development of many tools and machines was based not on scientific knowledge but on technological know-how.
- Benchmark O: The Information Age places emphasis on the processing and exchange of information.

Standard 19: Students will develop an understanding of and be able to select and use manufacturing technologies.

- Benchmark L: Servicing keeps products in good operating condition.
- Benchmark P: The interchangeability of parts increases the effectiveness of manufacturing processes.

Resources and Credits

Web Based Resources

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Unit Designer Comments

Provide any additional notes concerning the unit, as well as any suggestions you have for the would-be users of the unit.

Unit Title: *Invent* **Grade Level(s)**:
Subject/Topic Areas: *Communication Technology*
Time Frame:
Key Words:
Technology:
Unit Designer(s):
School District: **School**:

Brief Summary of Unit

Desired Results

Enduring Understandings: *Students will understand **that**...*

What will students understand (about what big ideas) as a result of the unit? "Students will understand that…"

Essential Questions

What arguable, recurring, and thought-provoking questions will guide inquiry and point toward the big ideas of the unit?

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Range of Evidence

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Unprompted Evidence

Summarize the observations and dialogues that may be used throughout the unit to monitor student learning.

Self-Assessment / Peer-Assessment

Summarize the assessment methods that will be used to guide student self-assessment and peer-assessment.

Learning Experiences and Instruction

Learning Activities:

Students will know WHERE the unit is headed and WHY:
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Learning Sequence:

Summarize or provide a list of the sequence of teaching and learning activities.

I. Discuss the design process, the seven steps.
II. Famous innovative designs, building, products, transportation
III. CAD
IV. Modeling
V. Brainstorming
VI. Patenting
VII. Royalties
VIII. Manufacturing
IX. Marketing

Activity Ideas:

1. Build product
2. Invent product

Standards Addressed:

Summarize or provide a list of the standards being addressed through teaching and learning activities.

Standard 6: Students will develop an understanding of the role of society in the development and use of technology.

- Benchmark I: A number of different factors, such as advertising, the strength of the economy, the goals of a company, and the latest fads, contribute to shaping the design of and demand for various technologies

Standard 10: Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.

- Benchmark J: Technological problems must be researched before they can be solved.
- Benchmark K: Not all problems are technological; not every problem can be solved by using technology.
- Benchmark L: Many technological problems require a multidisciplinary approach.

Standard 11: Students will develop abilities to apply the design process.

- Benchmark M: Identify the design problem to solve and decide whether or not to address it.
- Benchmark O: Refine a design by using prototypes and modeling to ensure quality, efficiency, and productivity of the final product.
- Benchmark Q: Develop and produce a product or system using a design process.

Standard 12: Students will develop abilities to use and maintain technological products and systems.

- Benchmark O: Operate systems so that they function in the way they were designed.
- Benchmark P: Use computers and calculators to access, retrieve, organize, process, maintain, interpret, and evaluate data and information in order to communicate.

Resources and Credits

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Unit Title: *Media in a Technological World* **Grade Level(s)**:
Subject/Topic Areas: *Communication Technology*
Time Frame:
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How will you *equip* students to *explore* the issues and *experience* the ideas?
What *events*, real or simulated, can students experience to make the ideas and issues real?
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Instruction and learning activities will be OGRANIZED to be engaging and effective:
How will the instruction and learning activities be organized for maximal engagement and effectiveness?

Learning Sequence:

Summarize or provide a list of the sequence of teaching and learning activities.

I. Discuss the Vehicles of Media Historically
II. Target Audience
    A. Purpose
    B. Demographics
    C. Age Groups
    D. Consumer Groups
    E. Population Structure Changes (on the move)
    F. Textbook Evolution *(*Repeated in Message Purpose due to the possibility of multiple messages and purposes*)*
        1. Who did we see then?
        2. Who do we see now?
III. Means of Medium
    A. Internet
    B. Print
    C. Software
    D. Transportation (Society is mobile)
        1. Mobile billboards
        2. Roadside billboards
        3. Bus window signs
        4. Taxis
        5. Airlines
IV. Message Purpose
    A. Inform
    B. Persuade
    C. Entertain
    D. Graphical Messages
    E. Textbook Evolution *(*Repeated in Target Audience due to the possibility of multiple messages and purposes*)*
        1. Who did we see then?
        2. Who do we see now?
    F. Marketability of Message—How does the society impact message?
    G. Language Stimuli
    H. Deciphering the Messages
        1. Upfront
        2. Subliminal
    I. Constraints
        1. Ratings
        2. Censoring

Activity Ideas:

1. Fashion Shooting
2. Digital Inserts Activity *(Rich Conley has this activity)*
3. Language Stimuli
    a. Scavenger hunt of messages around them
    b. Discuss how language couples with the image to impact the message

Standards Addressed:

Summarize or provide a list of the standards being addressed through teaching and learning activities.

Standard 8: Students will develop an understanding of the attributes of design.

- Benchmark H: The design process includes defining a problem; brainstorming; researching and generating ideas; identifying criteria and specifying constraints; exploring possibilities; selecting an approach; developing a design proposal; making a model or prototype; testing and evaluating the design using specifications; refining the design; creating or making it; and communicating processes and results.
- Benchmark J: The design needs to be continually checked and critiqued, and the ideas of the design must be redefined and improved.

Standard 13: Students will develop abilities to assess the impact of products and systems.

- Benchmark I: Interpret and evaluate the accuracy of the information obtained and determine if it is useful.
- Benchmark J: Collect information and evaluate its quality.
- Benchmark K: Synthesize data, analyze trends, and draw conclusions regarding the effect of technology on the individual, society, and the environment

Standard 17: Students will develop an understanding of and be able to select and use information and communication technologies.

- Benchmark J: The design of a message is influenced by such factors as the intended audience, medium, purpose, and nature of the message.
- Benchmark N: Information and communication systems can be used to inform, persuade, entertain, control, manage, and educate.
- Benchmark P: There are many ways to communicate information, such as graphic and electronic means.
- Benchmark Q: Technological knowledge and processes are communicated using symbols, measurement, conventions, icons, graphic images, and languages that incorporate a variety of visual, auditory, and tactile stimuli.

Standard 18: Students will develop an understanding of and be able to select and use transportation technologies.

- Benchmark L: Transportation services and methods have led to a population that is regularly on the move.

Standard 19: Students will develop an understanding of and be able to select and use manufacturing technologies.

- Benchmark K: Marketing a product involves informing the public about it as well as assisting in selling and distributing it.
- Benchmark R: Marketing involves establishing a product's identity, conducting research on its potential, advertising it, distributing it, and selling it.

Resources and Credits

Web Based Resources

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http://www.iteawww.org/
http://icontechlit.enc.org/
http://webster.commnet.edu/mla/index.shtml
http://www.apastyle.org/elecref.html

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Unit Designer Comments

Provide any additional notes concerning the unit, as well as any suggestions you have for the would-be users of the unit.

Unit Title: *Medical* **Grade Level(s)**:
Subject/Topic Areas: *Communication Technology*
Time Frame:
Key Words:
Technology:
Unit Designer(s):
School District: **School**:

Brief Summary of Unit

Desired Results

Enduring Understandings: *Students will understand **that**...*

What will students understand (about what big ideas) as a result of the unit? "Students will understand that…"

Essential Questions

What arguable, recurring, and thought-provoking questions will guide inquiry and point toward the big ideas of the unit?

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Evidence of Understanding

Range of Evidence

Performance Task Vignette(s):
Through what authentic performance task(s) will students demonstrate understanding? Provide a task overview (including GRASPS: Goal, role, audience, situation, product or performance, and standards) for each student performance task that will be used to assess student understanding.

Note the type of scoring tools that will be used to evaluate the products/performances – analytic rubric, holistic rubric, criterion performance list or checklist.

Other Evidence: Quizzes, Tests, Academic Prompts and Work Samples
What other assessment evidence will be collected during this unit?

Summarize the tools and tasks that will be used to monitor and guide student achievement.

Unprompted Evidence

Summarize the observations and dialogues that may be used throughout the unit to monitor student learning.

Self-Assessment / Peer-Assessment

Summarize the assessment methods that will be used to guide student self-assessment and peer-assessment.

Learning Experiences and Instruction

Learning Activities:

Students will know WHERE the unit is headed and WHY:
How will you help students know *where* they are headed and *why*?

Students will be HOOKED through engaging and provocative entry points:
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Learning Sequence:

Summarize or provide a list of the sequence of teaching and learning activities.

I. Diseases

II. Prevention/Detection

A. Nuclear Medicine

III. Therapy

IV. Technology in Health related areas

A. Advancements

B. X-ray

C. Scans

D. Orthoscopy

E. MRI

F. Ultrasound

G. Cloning

Activity Ideas:

1. Open discussion on health related diseases. (*Standard 1L & 14K*)
2. Open discussion on prevention/detection (*Standard 3J & 14K*)
3. Research on advancements within the health related areas (*Standard 3J, 4J, & 14K*)
   a. x-ray
   b. Orthoscopy
   c. MRI
   d. Ultrasound
   e. Cloning
4. Micro-photography – photograph various diseases w/in the health related areas and produce a graphical presentation representing that specific disease. (*Standard 3J & 14K*)
5. Design a layout/document detailing (explaining) a specific disease. (*Standard 14K*)

Standards Addressed:

Summarize or provide a list of the standards being addressed through teaching and learning activities.

Standard 1: Students will develop an understanding of the characteristics and scope of technology.

Benchmark L: Inventions and innovations are the results of specific, goal-directed research.

Standard 3: Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.

Benchmark J: Technological progress promotes the advancement of science and mathematics.

Standard 4: Students will develop an understanding of the cultural, social, economic, and political effects of technology.

Benchmark J: Ethical considerations are important in the development, selection, and use of technologies.

Standard 14: Students will develop an understanding of and be able to select and use medical technologies.

Benchmark K: Medical technologies include prevention and rehabilitation, vaccines and pharmaceuticals, medical and surgical procedures, genetic engineering, and the systems within which health is protected and maintained.

Resources and Credits

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Unit Title: *Technology and the Evnironment* **Grade Level(s)**:
Subject/Topic Areas: *Communication Technology*
Time Frame:
Key Words:
Technology:
Unit Designer(s):
School District: **School**:

Brief Summary of Unit

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Learning Sequence:

Summarize or provide a list of the sequence of teaching and learning activities.

I. Environmental information
   A. Negative impacts
      i. Emission
      ii. Auto
      iii. Manufacturing
      iv. Consumerism
      v. Medical
      vi. Population (life spans)
   B. Positive impacts
      i. Tracking population
      ii. Agricultural applications
      iii. Satellite imaging
      iv. Migration patterns
      v. Pollution tracking
      vi. Infrared photography

II. Film based photography
   A. Consumables
      i. Chemicals
      ii. Paper
      iii. Negative Consequences
      iv. Film
      v. Canister
      vi. Batteries

III. Digital Photography
   A. Batteries
   B. Useful life span (quickly becomes obsolete)

IV. Intended and Unintended Consequences

Activity Ideas:

1. Using infrared film to photograph different types of foliage to demonstrate crop Compliance (ASCS)
   a. Show differences between crop types
2. Create PowerPoint
   a. Track parking lot pollution (solid waste)
   b. Track automobile patterns and time (emissions)

Standards Addressed:

Summarize or provide a list of the standards being addressed through teaching and learning activities.

Standard 5: Students will develop an understanding of the effects of technology on the environment.

- Benchmark I: With the aid of technology, various aspects of the environment can be monitored to provide information for decision-making.
- Benchmark K: Humans devise technologies to reduce the negative consequences of other technologies.

Standard 11: Students will develop abilities to apply the design process.

- Benchmark L: Make a product or system and document the solution.
- Benchmark N: Identify criteria and constraints and determine how these will affect the design process.

Standard 12: Students will develop abilities to use and maintain technological products and systems.

- Benchmark L: Document processes and procedures and communicate them to different audiences using appropriate oral and written techniques.
- Benchmark P: Use computers and calculators to access, retrieve, organize, process, maintain, interpret, and evaluate data and information in order to communicate.

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Unit Title: Visual Communications **Grade Level(s)**:
Subject/Topic Areas: *Communication Technology*
Time Frame:
Key Words:
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Learning Sequence:

Summarize or provide a list of the sequence of teaching and learning activities.

I. The History of Visual Communications
   A. Early Forms of Visual Communications
      i. Branding
      ii. Cave drawings
      iii. Wax tablets
      iv. Printing press
      v. Early paper imaging
      vi. Electronic imaging
II. Our Societal Needs for Visual Communications
   A. Transferring information
   B. Mass media
   C. Advertising
   D. Safety communications (multi-lingual)
   E. Security
III. Society has Developed a Need for Rapid Communications
   A. Military
      i. Development of GPS
      ii. Development of web
   B. Real Time News Report
      i. Military
      ii. Commercial
      iii. Personal)
   C. Positioning systems
   D. Language translation
   E. Personal communications
   F. Laser Technologies

Activity Ideas:

1. Mass media for transmitting
   a. Via multiple locations
   b. Lasers
2. Quiz
3. Cooperative work
4. GPS mini-session (Extension Agents have access to these)
5. Video conferencing
6. Universal sign design that would be multi-lingual/multi-cultural

Standards Addressed:

Summarize or provide a list of the standards being addressed through teaching and learning activities.

Standard 1: Students will develop an understanding of the characteristics and scope of technology.

- Benchmark J: The nature and development of technological knowledge and processes are functions of the setting.
- Benchmark K: The rate of technological development and diffusion is increasing rapidly.

Standard 2: Students will develop an understanding of the core concepts of technology.

- Benchmark CC: New technologies create new processes.

Standard 3: Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.

- Benchmark G: Technology transfer occurs when a new user applies an existing innovation developed for one purpose in a different function.

Standard 9: Students will develop an understanding of engineering design.

- Benchmark K: A prototype is a working model used to test a design concept by making actual observations and necessary adjustments.
- Benchmark L: The process of engineering design takes into account a number of factors.

Standard 17: Students will develop an understanding of and be able to select and use information and communication technologies.

- Benchmark M: Information and communication systems allow information to be transferred from human to human, human to machine, machine to human, and machine to machine.
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